



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/826,074	04/04/2001	Mingjie Wang	WANG 4	3882

47396 7590 07/15/2005

HITT GAINES, PC  
AGERE SYSTEMS INC.  
PO BOX 832570  
RICHARDSON, TX 75083

EXAMINER

MENBERU, BENIYAM

ART UNIT	PAPER NUMBER
----------	--------------

2626

DATE MAILED: 07/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/826,074

Applicant(s)

WANG, MINGJIE

Examiner

Beniyam Menberu

Art Unit

2626

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 24 January 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)              | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)     | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449, or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                                    |

***Response to Arguments***

1. Applicant's arguments, see pages 11-13 of Remarks, filed January 24, 2005, with respect to the rejection(s) of claim(s) 1, 2, 4, 5, 8, 9, 11, 12, 15, 16, 18, 19, 22, 23, 25, and 26 under U.S. Patent No. 6597725 to Ishii in view of U.S. Patent No. 5251020 to Sugiyama have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of U.S. Patent No. 4462108 to Miller.

***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 2, 4, 5, 8, 9, 11, 12, 22, 23, 25, 26, 29, and 30 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 4462108 to Miller.

Regarding claims 1 and 8, Miller discloses a system and method for recovering primary channel operation facsimile receiver, comprising:  
a signal receiver that receives a signal containing first and second points located at first and second angles (column 5, lines 43-52) ; and  
angle determination circuitry that determines one of said first and second angles is an offset angle by which said signal has been rotated (column 6, lines 20-44).\

Regarding claims 2, 9, and 23, Miller teaches all the limitations of claims 1, 8, and 22 respectively. Further Miller teaches separation of about  $90^\circ$  between first and second angles (In Figure 2c, Miller shows possible points location wherein some of the pair of points are about  $90^\circ$  separated from each other.).

Regarding claims 4, 11, and 25, Miller teaches all the limitations of claims 1, 8, and 22 respectively. Further Miller discloses the system wherein said angle determination circuitry causes said offset angle to equal said first angle when at least  $180^\circ$  separate said first and second angles (column 6, lines 31-38).

Regarding claims 5, 12, and 26, Miller teaches all the limitations of claims 1, 8, and 22 respectively. Further Miller discloses the system wherein said angle determination circuitry causes said offset angle to equal said second angle when fewer than  $180^\circ$  separate said first and second angles (column 6, lines 38-44).

Regarding claim 22, Miller discloses an apparatus that determines the difference between a received constellation of signals and an expected constellation of signals (column 3, lines 5-10), comprising:  
signal receiver that receives a constellation signals containing first and second points located at first and second angles, respectively (Figure 2c; column 5, lines 43-52); and  
angle determination circuitry that determines one of said first and second angles is an offset angle by which the first and second points have been rotated from an expected constellation of signals (column 6, lines 20-44).

Regarding claim 29, Miller teaches all the limitations of claim 22. Further Miller discloses the apparatus as recited in Claim 22 wherein the angle determination

Art Unit: 2626

circuitry updates an equalizer in the signal receiver as a function of the determined offset angle (In Figure 3, reference 72 feeds back indirectly to the adaptive equalizer 16 through reference 12 and 14. The reference 72 is related to the phase correction as shown in Figure 3.).

Regarding claim 30, Miller teaches all the limitations of claim 22. Further Miller discloses the apparatus as recited in Claim 22 wherein the angle determination circuitry updates an equalizer applied to incoming data signals based upon the offset angle between the incoming data signals and a set of training signals (In Figure 3, reference 72 feeds back indirectly to the adaptive equalizer 16 through reference 12 and 14. The reference 72 is related to the phase correction as shown in Figure 3. (column 1, lines 33-41; column 5, lines 30-40).

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 3, 10, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4462108 to Miller in view of U.S. Patent No. 5790594 to Peng.

Regarding claims 3, 10, and 24, Miller teaches all the limitations of claims 1, 8, and 22 respectively. However Miller does not disclose a system and method wherein

Art Unit: 2626

said signal conforms to International Telecommunications Union Recommendation V.34.

Peng discloses a system and method as recited in claim 1 wherein said signal conforms to International Telecommunications Union Recommendation V.34 (column 2, lines 41-45).

Miller and Peng are combinable because they are in the similar problem area of facsimile communication.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the V.34 communication standard taught by Peng with the system of Miller to implement V.34 standard of facsimile communication.

The motivation to combine the reference is clear because International Telecommunications Union Recommendation V.34 signals are taught by Peng to be of high quality for modem communication (column 1, lines 29-33).

6. Claims 6, 7, 13, 14, 27, and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4462108 to Miller in view of U.S. Patent No. 6426946 to Takagi et al.

Regarding claims 6, 13, and 27, Miller teaches all the limitations of claims 1, 8, and 22 respectively. However Miller does not disclose the system as recited in Claim 1 wherein said signal is an S signal.

Takagi et al disclose a system wherein said signal is an S signal (column 8, lines 27-30).

Miller and Takagi et al are combinable because they are in the similar problem area of facsimile communication.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the S signal of Takagi et al with the system of Miller to implement the training signal for the receiver.

The motivation to combine the reference is clear because S signals are used in facsimile communication for training purpose as taught by Takagi et al (column 8, lines 27-30).

Regarding claims 7, 14, and 28, Miller teaches all the limitations of claims 1, 8, and 22 respectively. Takagi et al further disclose the system wherein said angle determination circuitry refines said offset angle based on a subsequent signal (Takagi et al shows that the "S" signal and subsequent signals are used for training and adjusting for the characteristics of the line (column 8, lines 27-34))

7. Claims 15, 16, 18, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5848346 to Takashiro in view of U.S. Patent No. 4462108 to Miller.

Regarding claim 15, Takashiro discloses a facsimile machine, comprising: image formation circuitry (column 6, lines 12-24); telecommunications circuitry, including a facsimile receiver, coupled to said image formation circuitry (column 6, lines 12-24). However Takashiro does not disclose a system, associated with said facsimile receiver, for recovering primary channel operation, including:

Art Unit: 2626

a signal receiver that receives a signal containing first and second points located at first and second angles, and  
angle determination circuitry that determines one of said first and second angles is an offset angle by which said signal has been rotated.

Miller discloses a system, associated with said facsimile receiver, for recovering primary channel operation, including:

a signal receiver that receives a signal containing first and second points located at first and second angles (column 5, lines 43-52), and  
angle determination circuitry that determines one of said first and second angles is an offset angle by which said signal has been rotated (column 6, lines 20-44).

Takashiro and Miller are combinable because they are in the similar problem area of facsimile communication.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the signal receiver and angle determination circuitry of Miller with the system of Takashiro to implement phase correction in received signals.

The motivation to combine the reference is clear because Miller teaches that acquisition speed of modems can be improved using the invention (column 2, lines 55-68).

Regarding claim 16, Takashiro in view of Miller teaches all the limitations of claim 15. Further Miller discloses the facsimile machine as recited in Claim 15 wherein about 90° separate said first and second angles (In Figure 2c, Miller shows possible points location wherein some of the pair of points are about 90° separated from each other.).



Regarding claim 18, Takashiro in view of Miller teach all the limitations of claim 15. Further Miller discloses the facsimile machine as recited in Claim 15 wherein said angle determination circuitry causes said offset angle to equal said first angle when at least 180° separate said first and second angles (column 6, lines 31-38).

Regarding claim 19, Takashiro in view of Miller teach all the limitations of claim 15. Further Miller discloses the facsimile machine as recited in Claim 15 wherein said angle determination circuitry causes said offset angle to equal said second angle when fewer than 180° separate said first and second angles (column 6, lines 38-44).

8. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5848346 to Takashiro in view of U.S. Patent No. 4462108 to Miller further in view of U.S. Patent No. 5790594 to Peng.

Regarding claim 17, Takashiro in view of Miller teaches all the limitations of claim 15. However Takashiro in view of Miller does not disclose a system and method wherein said signal conforms to International Telecommunications Union Recommendation V.34.

Peng discloses a system and method as recited in claim 1 wherein said signal conforms to International Telecommunications Union Recommendation V.34 (column 2, lines 41-45).

Takashiro, Miller, and Peng are combinable because they are in the similar problem area of facsimile communication.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine V.34 communication standard of Peng with the system of

Takashiro in view of Miller to implement V.34 communication standard for facsimile communication.

The motivation to combine the reference is clear because International Telecommunications Union Recommendation V.34 signals are taught by Peng to be of high quality for modem communication (column 1, lines 29-33).

9. Claims 20 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5848346 to Takashiro in view of U.S. Patent No. 4462108 to Miller further in view of U.S. Patent No. 6426946 to Takagi et al.

Regarding claim 20, Takashiro in view of Miller teaches all the limitations of claim 15. However Takashiro in view of Miller does not disclose facsimile machine wherein said signal is an S signal.

Takagi et al disclose a system wherein said signal is an S signal (column 8, lines 27-30).

Takashiro, Miller, and Takagi et al are combinable because they are in the similar problem area of facsimile communication.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the S signal of Takagi et al with the system of Takashiro in view of Miller to implement the training signal for the receiver.

The motivation to combine the reference is clear because S signals are used in facsimile communication for training purpose as taught by Takagi et al (column 8, lines 27-30).

Regarding claim 21, Takashiro in view of Miller teaches all the limitations of claim 15. Further Takagi et al disclose the facsimile machine as recited in Claim 15 wherein said angle determination circuitry refines said offset angle based on a subsequent signal (Takagi et al shows that the "S" signal and subsequent signals are used for training and adjusting for the characteristics of the line (column 8, lines 27-34)).

***Other Prior Art Cited***

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent No. 4174489 to Guidoux et al disclose phase discriminator for a receiver.

U.S. Patent No. 4381546 to Armstrong disclose system for analyzing channel impairments.

U.S. Patent No. 5524026 to Murata disclose timing phase method and apparatus.

U.S. Patent No. 5727083 to Kelly et al disclose error correction for facsimile.

U.S. Patent No. 6438186 to Strait discloses initialization method and apparatus for symbol timing.

U.S. Patent No. 5473637 to Gardner discloses phase estimation method and apparatus.

U.S. Patent No. 6731710 to Genossar et al disclose efficient frequency estimation method.

U.S. Patent No. 5684835 to Kroeger et al disclose Quadrature Phase Shift

Keying detector.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Beniyam Menberu whose telephone number is (571) 272-7465. The examiner can normally be reached on 8:00AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kimberly Williams can be reached on (571) 272-7471. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the customer service office whose telephone number is (571) 272-2600. The group receptionist number for TC 2600 is (571) 272-2600.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published

Art Unit: 2626

applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see <http://pair-direct.uspto.gov/>.

Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

**Patent Examiner**

Beniyam Menberu

BM

07/05/2005

  
KIMBERLY WILLIAMS  
SUPERVISORY PATENT EXAMINER